

holding a catalytic element that promotes the crystallization of said semiconductor film in contact with said semiconductor film; and

irradiating a laser beam shaped in a rectangle or a square from one side of said amorphous semiconductor film toward another side thereof while moving said substrate to sequentially crystallize said amorphous semiconductor film to form a crystalline semiconductor film,

wherein said laser beam has an irradiation area of said pulsed laser beam of 10 cm² or more.

4. (Amended) A method of manufacturing a semiconductor device, comprising:

forming an amorphous semiconductor film;

holding a catalytic element contained in a solution which promotes the crystallization of said semiconductor film in contact with said semiconductor film; and

irradiating a laser beam whose irradiation area in one shot is 10 cm² or more to said amorphous semiconductor film to crystallize said semiconductor film and to form a crystalline semiconductor film.

5. (Amended) A method of manufacturing a semiconductor device, comprising:

forming an amorphous semiconductor film;

holding a compound containing a catalytic element which promotes the crystallization of said semiconductor film in contact with said semiconductor film; and

irradiating a laser beam whose irradiation in one area in one shot is 10 cm² or more to said amorphous semiconductor film to crystallize said amorphous semiconductor film and to form a crystalline semiconductor film.

6. (Amended) A method of manufacturing a semiconductor device, comprising:

forming an amorphous semiconductor film;

holding a catalytic element which promote the crystallization of said semiconductor film in contact with said semiconductor film;

irradiating a laser beam whose irradiation area in one shot is 10 cm² or more to said amorphous semiconductor film to crystallize said amorphous semiconductor film and to form a crystalline semiconductor film; and

conducting a thermal oxide processing in an oxide atmosphere to form an oxide film on the surface of said crystalline semiconductor film and gettering said catalytic element to said oxide film to remove or reduce said catalytic element existing in said crystalline semiconductor film.

7. (Amended) A method of manufacturing a semiconductor device as claimed in claim 6, further comprising a step of removing said oxide film.

D2
C1
Wiel

8. (Amended) A method of manufacturing a semiconductor device, comprising:

- forming an amorphous semiconductor film;
- holding a catalytic element which promote the crystallization of said semiconductor film in contact with said semiconductor film;
- irradiating a laser beam whose irradiation area in one shot is 10 cm^2 or more to said amorphous semiconductor film to crystallize said amorphous semiconductor film and to form a crystalline semiconductor film; and
- selectively adding at least one of phosphorus and boron to said crystalline semiconductor film and gettering said catalytic element to said added region by conducting a heat treatment to remove or reduce said catalytic element existing in said crystalline semiconductor film.

20. (Twice Amended). A method of manufacturing a semiconductor device comprising the steps of:

D3
C2

- forming a semiconductor film comprising amorphous silicon on an insulating surface;
- providing said semiconductor film with a crystallization promoting material comprising a metal;
- crystallizing said semiconductor film by irradiating said amorphous semiconductor film with a pulsed laser beam,
- wherein said laser beam has a pulse width of 200 nsec or more,
- wherein said laser beam has an irradiation area of said pulsed laser beam of 10 cm^2 or more.